Listing of Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method of acquiring pulse oximetry and electrocardiogram signals from a patient, the method comprising:

configuring a single transducer and attaching the single transducer to a finger of a patient ~~with a neural-muscular transmission device~~, wherein the single transducer includes a single electrode such that when the single transducer is attached to the finger of the patient, the signal transducer is configured to acquire a pulse oximetry signal ~~with the single transducer~~ and acquire an electrocardiogram signal with the single electrode, wherein the acquired electrocardiogram signal is either one of a reference electrocardiogram signal or a non-reference electrocardiogram signal, and further wherein a neural-muscular transmission device is coupled to the transducer, and includes a support member that extends to a thumb of the patient; ~~and~~

acquiring the pulse oximetry signal and the electrocardiogram signal with the single electrode~~,~~;

stimulating the patient with the neural-muscular transmission device; and

measuring the strength of muscle contraction caused by the stimulating step;

wherein use of the neural-muscular transmission device provides~~effectuates~~ an artifact free pulse oximetry signal.

2. (Original) The method of claim 1 and further comprising generating a blood oxygen saturation output signal based on the pulse oximetry signal.

3. (Cancelled)

4. (Previously Presented) The method of claim 1 and further comprising attaching at least one additional electrode to the patient, and acquiring at least one additional electrocardiogram signal from the patient, wherein the at least one additional electrocardiogram signal is the reference electrocardiogram signal if the single transducer acquires the non-reference electrocardiogram signal, and further wherein the at least one additional electrocardiogram signal is the non-reference electrocardiogram signal if the single transducer acquires the reference electrocardiogram signal.

5. (Original) The method of claim 4 and further comprising generating at least one electrocardiogram output signal based on the reference electrocardiogram signal and the at least one non-reference electrocardiogram signal.

6. (Original) The method of claim 5 and further comprising acquiring an impedance respiration signal from the patient.

7. (Original) The method of claim 6 and further comprising generating a cardio-respirogram output signal based on the pulse oximetry signal, the reference electrocardiogram signal, the at least one non-reference electrocardiogram signal, and the impedance respiration signal.

8. (Original) The method of claim 4 and further comprising generating at least one channel of electrocardiogram output data based on the reference electrocardiogram signal and the at least one non-reference electrocardiogram signal.

9. (Original) The method of claim 1 and further comprising attaching the single transducer and at least two additional electrodes to the patient, and acquiring signals to generate a cardio-respirogram output signal.

10. (Cancelled)

11. (Currently Amended) The method of claim 1~~10~~ and further comprising filtering at least one of the pulse oximetry signal and the electrocardiogram signal acquired when the neural-muscular transmission signal was being acquired.

12. (Currently Amended) The method of claim 1~~10~~ and further comprising ignoring at least one of the pulse oximetry signal and the electrocardiogram signal acquired when the neural-muscular transmission signal was being acquired.

13. (Original) The method of claim 10 and further comprising using the neural-muscular transmission signal to monitor anesthesia.

14. (Currently Amended) The method of claim 1 wherein~~and further comprising attaching a single transducer to the patient,~~ the single transducer includes~~including~~ an oximeter having at least two light-emitting diodes.

15. (Currently Amended) The method of claim 1 ~~and further comprising attaching a single transducer to the patient,~~wherein the single transducer includes~~including~~ a photo plethysmograph sensor having at least one light-emitting diode.

16. (Currently Amended) A device for acquiring pulse oximetry and electrocardiogram signals from an appendage of a patient, the device comprising:

a substrate that can be attached to the appendage of the patient;

at least one emitter coupled to the substrate, the at least one emitter positioned to emit radiation through the appendage;

at least one detector coupled to the substrate, the at least one detector positioned to receive the radiation emitted through the appendage, the at least one detector generating a pulse oximetry signal based on the received radiation;~~and~~

an electrode coupled to the substrate, the electrode configured to generate either one of a reference electrocardiogram signal or a non-reference electro-cardiogram signal~~,~~; and

~~wherein the substrate is configured in~~ a neural-muscular transmission device (NMT), wherein the NMT includes a semi-rigid support member coupled to the substrate and extending in a clam shell shape to a thumb of the patient, such that the NMT measures the strength of muscle contractions of the patient caused by an applied stimulus and provides~~effectuates~~ an artifact free pulse oximetry signal.

17. (Original) The device of claim 16 wherein the at least one emitter includes a first red light-emitting diode and a second infra-red light-emitting diode.

18. (Original) The device of claim 17 wherein the at least one detector includes a single detector to receive radiation emitted by the first red light-emitting diode and the second infra-red light-emitting diode.

19. (Original) The device of claim 16 and further comprising a common reference wire coupled to the electrode and the at least one detector.

20. (Original) The device of claim 16 and further comprising an electrocardiogram reference wire coupled to the electrode and an oximetry reference wire coupled to the at least one detector in order to isolate the electrode from the at least one detector.

21. (Original) The device of claim 16 and further comprising a multi-wire connector coupled to the at least one emitter, the at least one detector, and the electrode.

22. (Original) The device of claim 16 wherein the substrate is sized for attachment to an appendage of at least one of an infant and a neonate.

23. (Original) The device of claim 16 wherein the substrate includes an elongated portion adapted to be folded in half over the appendage in order to position the at least one emitter to emit radiation through a first side of the appendage and the at least one detector to receive the emitted radiation through a second side of the appendage.

24. (Cancelled)

25. (Original) The device of claim 24 and further comprising a processor that filters at least one of the pulse oximetry signal and the electrocardiogram signal acquired when the neural-muscular transmission signal was being acquired.

26. (Original) The device of claim 24 and further comprising a processor that ignores at least one of the pulse oximetry signal and the electrocardiogram signal acquired when the neural-muscular transmission signal was being acquired.

27. (Cancelled)

28. (Currently Amended) A system for monitoring pulse oximetry and electrocardiogram signals acquired from a patient, the system comprising:

a transducer including

a substrate that can be attached to an appendage of the patient,

at least one emitter coupled to the substrate, the at least one emitter positioned to emit radiation through the appendage,

at least one detector coupled to the substrate, the at least one detector positioned to receive the radiation emitted through the appendage, the at least one detector generating a pulse oximetry signal, and

a first electrode coupled to the substrate, the first electrode generating either one of a reference or a non-reference electrocardiogram signal;

at least one second electrode attached to the patient, the at least one second electrode generating a non-reference electrocardiogram signal when the first electrode generates a reference electrocardiogram signal, and generating a reference electrocardiogram signal when the first electrode generates a non-reference electrocardiogram signal; and

a monitoring instrument that receives the pulse oximetry signal, the reference electrocardiogram signal, and the non-reference electrocardiogram signal, the monitoring instrument generating a blood oxygen saturation output signal and at least one electrocardiogram output signal~~,~~; and

~~wherein the substrate is configured in~~ a neural-muscular transmission device (NMT), wherein the NMT includes a semi-rigid support member coupled to the substrate

and extending in a clam shell shape to a thumb of the patient, such that the NMT measures the strength of muscle contractions of the patient caused by an applied stimulus and provides ~~effectuates~~ an artifact free pulse oximetry signal.

29. (Original) The system of claim 28 wherein the monitoring instrument generates an impedance respiration signal from at least one of the first electrode and the at least one second electrode.

30. (Original) The system of claim 29 wherein the monitoring instrument generates a cardiorespirogram output signal based on the pulse oximetry signal, the reference electrocardiogram signal, the at least one non-reference electrocardiogram signal, and the impedance respiration signal.

31. (Original) The system of claim 28 wherein the monitoring instrument generates at least one channel of electrocardiogram output data based on the reference electrocardiogram signal and the at least one non-reference electrocardiogram signal.

32. (Original) The system of claim 28 wherein the at least one emitter includes a first red light-emitting diode and a second infra-red light-emitting diode.

33. (Original) The system of claim 32 wherein the at least one detector includes a single detector to receive radiation emitted by the first red light-emitting diode and the second infra-red light-emitting diode.

34. (Original) The system of claim 28 wherein the transducer includes a common reference wire coupled to the first electrode and the at least one detector.

35. (Original) The system of claim 28 wherein the transducer includes an electrocardiogram reference wire coupled to the first electrode and an oximetry reference wire coupled to the at least one detector in order to isolate the first electrode from the at least one detector.

36. (Original) The system of claim 35 wherein the transducer includes a multi-wire connector coupled to the at least one emitter, the at least one detector, and the first electrode.

37. (Original) The system of claim 28 wherein the substrate is sized for attachment to an appendage of at least one of an infant and a neonate.

38. (Original) The system of claim 28 wherein the substrate includes an elongated portion adapted to be folded in half over the appendage in order to position the at least one emitter to emit radiation through a first side of the appendage and the at least one detector to receive the emitted radiation through a second side of the appendage.

39. (Currently Amended) The system of claim 28 ~~and further comprising a neural-muscular transmission device coupled to the substrate, the neural-muscular transmission device generating a neural-muscular transmission signal,~~wherein the monitoring instrument generates~~generating~~ a neural-muscular transmission output signal for monitoring anesthesia.

40. (Original) The device of claim 39 wherein the monitoring instrument filters at least one of the pulse oximetry signal and the electrocardiogram signal acquired when the neural-muscular transmission signal was being acquired.

41. (Original) The device of claim 39 wherein the monitoring instrument ignores at least one of the pulse oximetry signal and the electrocardiogram signal acquired when the neural-muscular transmission signal was being acquired.

42. (Currently Amended) A method of acquiring pulse oximetry and electrocardiogram signals from a patient, the method comprising:

configuring a transducer to include at least one emitter, at least one detector, and a first electrode and attaching the transducer to an appendage of the patient ~~with a neural-muscular transmission device~~;

attaching at least one second electrode to the patient wherein the transducer is configured such that a pulse oximetry signal is acquired from the at least one detector and a reference or non-reference electrocardiogram signal is acquired from the first electrode, further wherein the at least one second electrode is configured such that a non-reference electrocardiogram signal from the at least one second electrode when the first electrode acquires a reference electrocardiogram signal and a reference electrocardiogram signal when the first electrode acquires a non-reference signal, and further wherein a neural-muscular transmission device is coupled to the transducer, and includings a support member that extends to a thumb of the patient;

stimulating the patient with the neural-muscular transmission device; and

measuring the strength of muscle contraction caused by the stimulating step

wherein use of the neural-muscular transmission device provides~~effectuates~~ an artifact free pulse oximetry signal;

generating a blood oxygen saturation output signal based on the pulse oximetry signal; and

generating at least one electrocardiogram output signal based on the reference electrocardiogram signal and the non-reference electrocardiogram signal.

43. (Original) The method of claim 42 and further comprising generating an impedance respiration signal based on the first electrode and the at least one second electrode.

44. (Original) The method of claim 43 and further comprising generating a cardio-respirogram output signal based on the pulse oximetry signal, the reference electrocardiogram signal, the at least one non-reference electrocardiogram signal, and the impedance respiration signal.

45. (Original) The method of claim 42 and further comprising generating at least one channel of electrocardiogram output data based on the reference electrocardiogram signal and the at least one non-reference electrocardiogram signal.

46. (Currently Amended) A method of acquiring pulse oximetry and electrocardiogram signals from an infant, the method comprising:

configuring a transducer to include at least one emitter, at least one detector, and a first electrode, and attaching the transducer to a finger of the infant ~~with a neural-muscular transmission device~~;

attaching at least two additional electrodes to the infant wherein the transducer is configured such that a pulse oximetry signal is acquired from the detector, a reference electrocardiogram signal is acquired from any one of the electrodes, and at least two non-reference electrocardiogram signals are acquired from the remaining electrodes, and further wherein a neural-muscular transmission device is coupled to the transducer, and includings a support member that extends to a thumb of the patient;

stimulating the patient with the neural-muscular transmission device; and

measuring the strength of muscle contraction caused by the stimulating step

wherein use of the neural-muscular transmission device provides~~effectuates~~ an artifact free pulse oximetry signal; and

generating a blood oxygen saturation output signal based on the pulse oximetry signal and generating at least one electrocardiogram signal based on the reference electrocardiogram signal and the at least two non-reference electrocardiogram signals.